LIMITED AUTOMATIC REPEAT REQUEST PROTOCOL FOR FRAME-BASED COMMUNICATION CHANNELS

ABSTRACT OF THE DISCLOSURE

In a frame-switched network, a sender sends frames to a receiver over a possibly unreliable channel. Sent frames include frame identifiers that can be used for a limited automatic repeat request. Upon receipt of a frame, the receiver determines, from the frame identifier, if frames prior to the received frame were lost in transit. If the receiver determines that it missed a prior frame, the receiver sends the sender a negative acknowledgment (nack) for the missed prior frame or frames. Otherwise, if the receiver receives a frame correctly, it does not acknowledge the frame. The frame identifiers can be a set of sequential integers with frames transmitted in sequential frame order. In some embodiments, when a receiver receives a frame out of order, the receiver buffers the out of order frame in a receiver buffer for a receive buffer period until preceding frames are received or a receive buffer period expires. The sender can send a reminder frame to the receiver to allow the receiver to detect a missed prior frame missing from an end of a frame sequence. The channel between the sender and the receiver can be a bidirectional channel over a telephone wire, a cable, a radio frequency link or a power wire. Multiple logical channels might be set up between a given sender-receiver pair, to allow for traffic of varying priorities.

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